

Claim 30 (Amended)

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cont.
A microscope assemblage, having a light source (1), a microscope optical system, a detection device (13), a detection stop (12) defining a first optical reference plane and a second reference plane wherein an entire beam path is defined as perpendicular to said first optical reference plane and said second optical reference plane and through a center of said detection stop, and said light source is operatively arranged to be adjusted in configuration.

Claim 31 (Amended)

The apparatus as defined in Claim 30, characterized in that all optical elements are alignable with respect to the reference planes.

Remarks

The Objections to Claims 15, 23, and 27

The Examiner objected to Claims 15, 23, and 27 for containing informalities, in that the specified claims contained terms without antecedent basis. Claims 15, 23, and 27 have been amended to provide antecedent basis to the cited terms. Withdrawal of the objection is respectfully requested.

The Section 112 Rejection of Claims 9, 29, and 31

The Examiner rejected Claims 9, 29, and 31 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicant regards as the invention. To the extent that the rejection may apply to the amended claims, applicant respectfully traverses this rejection and requests reconsideration.

Claim 9 recites, “the plane in which the light source lies is a plane corresponding to the plane of the detection stop (12).” The Examiner has states that this implies that the elements are located in the same position. Applicant respectfully disagrees. With reference to Figure 1, the plane that light source lies in is the plane of the paper. The plane that the detection stop lies in is the plane of the paper. Thus, the plane of the light source corresponds with that of the detection stop. The fact that two objects lie in the same plane does not require them to occupy the same position. In this case, both objects occupy a position in the plane of the Figure. Thus, Applicant believes that the language of Claim 9 is clear and definite.

Claim 29 has been amended to depend from Claim 28. Since Claim 28 refers to “a first reference plane” and “a second reference plane,” Applicant believes the term “the reference planes” in Claim 29 now has antecedent basis.

Claim 31 has been amended to recite “The apparatus” rather than “The method.” Since Claim 31 depends from apparatus Claim 30, amended Claim 31 is now definite.

In view of these arguments and amendments, reconsideration of the rejection is respectfully requested.

The Section 102 Rejection of Claims 1-6, 9, 11-13, 18-21, and 28-31

The Examiner rejected Claims 1-6, 9, 11-13, 18-21, and 28-31 under 35 U.S.C. §102(b) as anticipated by United States Patent No. 5,035,476 (Ellis et al.). To the extent the rejection applies to amended Claims 1, 12, 28, and 30, Applicant traverses the rejection and respectfully requests reconsideration.

Amended Claim 1 recites, “carrying out an iterative alignment by adjusting the configuration of the light source until the entire beam path is between said first optical reference

point and said second optical reference point.” Ellis is a microscope that contains fewer parts than the conventional microscope, to reduce the number of parts that must be aligned. Column 1, lines 49-52. However, there is no teaching of any kind as how to align these components. Thus, there is no teaching, nor any suggestion or motivation, as to “carrying out an iterative alignment by adjusting the configuration of the light source until the entire beam path is between said first optical reference point and said second optical reference point.” Since the cited reference does not disclose each and every element of Claim 1, Claim 1 is not anticipated by the cited reference.

Claims 2, 3, 5, 6, 9, 11 depend from Claim 1. Since Claim 1 is not anticipated by the cited reference, Claims 2, 3, 5, 6, 9, and 11 are not anticipated by the cited reference.

Amended Claim 12 recites, “said light source is operatively arranged to be adjusted in configuration.” Ellis does not disclose that the light source 51 can be adjusted in any manner to align the components of the microscope. Further, Ellis does not in any way suggest or motivate a light source that is adjustable for aligning the optical components of the microscope. Since the cited reference does not disclose each and every element of Claim 12, Claim 12 is not anticipated by the cited reference.

Claims 13, 18, 20, and 21 are dependent from Claim 12. Since Claim 12 is not anticipated by the cited reference, Claims 13, 18, 20, and 21 are not anticipated by the cited reference.

Amended Claim 28 recites, “carrying out an iterative alignment by adjusting the configuration of the light source until the entire beam path is perpendicular to said first optical reference plane and said second optical reference plane and through a center of said detection stop.” As stated above, there is no teaching of any kind in Ellis as how to align optical

components in a microscope. Thus, there is no teaching, nor any suggestion or motivation, as to “carrying out an iterative alignment by adjusting the configuration of the light source until the entire beam path is perpendicular to said first optical reference plane and said second optical reference plane and through a center of said detection stop.” Since the cited reference does not disclose each and every element of Claim 28, Claim 28 is not anticipated by the cited reference.

Claims 4 and 29 are dependent from Claim 28. Since Claim 28 is not anticipated by the cited reference, Claims 4 and 29 are not anticipated by the cited reference.

Amended Claim 30 recites, “said light source is operatively arranged to be adjusted in configuration.” As stated above, Ellis does not teach, suggest, or in any way motivate a light source 51 that can be adjusted in any manner to align the optical components of a microscope. Since the cited reference does not disclose each and every element of Claim 30, Claim 30 is not anticipated by the cited reference.

Claims 19 and 31 are dependent from Claim 30. Since Claim 30 is not anticipated by the cited reference, Claims 19 and 31 are not anticipated by the cited reference.

The Section 103 Rejection of Claims 7-8, 10, 14-17, and 22-27

The Examiner rejected Claims 7-8, 10, 14-17, and 22-27 under 35 U.S.C. §103(a) as unpatentable over United States Patent No. 5,035,476 (Ellis et al.). Applicant traverses the rejection and respectfully requests reconsideration.

Claims 7-8 and 10 depend from Claim 1, which, as discussed above, is patentable in light of the cited reference. Thus, Claims 7-8 and 10 are also patentable in light of the cited reference.

Claims 14-17 and 22-27 depend from Claim 12, which, as discussed above, is patentable in light of the cited reference. Thus, Claims 14-17 and 22-27 are also patentable in light of the cited reference.

New Claims

Claims 32-35 have been added to claim the present invention wherein the alignment is achieved using lateral movement and rotational movements of optical components. Entry into the present application in a favorable light is courteously requested.

Conclusion

For all of the reasons outlined above, Applicant respectfully submits that all pending claims are patentable and in condition for allowance, which action is courteously requested.

Respectfully submitted,



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MARKED VERSION OF AMENDED CLAIMS

1. A method for aligning the optical beam path of a microscope, having a light source (1), a microscope optical system, a detection stop (12), and a detection device (13), wherein the method comprises the steps of:

- a) providing a center of the detection stop (12) as a first optical reference point;
[and,]
- b) providing a second optical reference point wherein an entire beam path is defined by said first optical reference point and said second optical reference point; and,
- c) carrying out an iterative alignment by adjusting the configuration of the light source until the entire beam path is between said first optical reference point and said second optical reference point.

12. A microscope assemblage, having a light source (1), a microscope optical system, a detection device (13), a detection stop (12) defining a first optical reference point and a second optical reference point wherein an entire beam path is defined by said first optical reference point and said second optical reference point, and said light source is operatively arranged to be adjusted in configuration.

15. The microscope assemblage as defined in Claim 14, characterized in that the focus of the resonator light bundle of the laser resonator in the laser resonator serves as an [the] intra-laser point light source (19).

23. The microscope assemblage as defined in Claim 22, characterized in that the lateral displacement of the point light source is accomplished by way of a lateral displacement of an [the] illumination stop (3).

27. The microscope assemblage as defined in Claim 13, characterized in that the illuminating light beam is rotated or tilted about an [the] illumination stop (3).

28. A method for aligning the optical beam path of a microscope, having a light source (1), a microscope optical system, a detection stop (12), and a detection device (13), wherein the method comprises the steps of:

a) providing the plane of the detection stop (12) as a first optical reference plane;
[and,]

b) providing a second reference plane wherein an entire beam path is defined as perpendicular to said first optical reference plane and said second optical reference plane and through a center of said detection stop; and,

c) carrying out an iterative alignment by adjusting the configuration of the light source until the entire beam path is perpendicular to said first optical reference plane and said second optical reference plane and through a center of said detection stop.

29. The method as defined in Claim 28 [1], characterized in that all optical elements are aligned with respect to the reference planes.

30. A microscope assemblage, having a light source (1), a microscope optical system, a detection device (13), a detection stop (12) defining a first optical reference plane and a second reference plane wherein an entire beam path is defined as perpendicular to said first optical reference plane and said second optical reference plane and through a center of said detection stop, and said light source is operatively arranged to be adjusted in configuration.

31. The apparatus [method] as defined in Claim 30, characterized in that all optical elements are alignable with respect to the reference planes.